

DETAILED ACTION

This application is a 371 (national stage application) of PCT/EP04/07741.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 21, 2011, has been entered.

Receipt of Amendments/Remarks filed on March 21, 2011, is acknowledged. In response to final Office Action dated October 19, 2010, applicant amended claim 1 and added new claim 25. Claims 1-25 are pending. Claims 1-16 & 25 are under examination.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. All new rejections applied have been necessitated by applicant's amendment to the claims. They constitute the complete set presently being applied to the instant application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-12, 14-16, & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hossel et al. (US PreGrant Publication 2001/0021375, hereafter Hossel1).

Applicant claims

Applicant claims an aqueous polymeric dispersion obtainable from the free-radical polymerization of mixture of a) at least one α,β -ethylenically unsaturated amide-containing monomer, b) a crosslinking monomer containing two α,β -ethylenically

unsaturated double bonds, and c) a monomer containing an α,β -ethylenically unsaturated double bond and a cationic or cationogenic group, in an aqueous medium in the presence of an aqueous polymeric anionic dispersant D).

**Determination of the scope and content of the prior art
(MPEP 2141.01)**

Hossel1 teaches, as a whole, a cosmetic light protection formulation comprising a polymeric composition (abstract).

Hossel1 teaches a copolymer obtained by the free-radical polymerization of a mixture of monomers ([0060]), where in the monomers used include (a) N-vinylimidazoles ([0023], corresponds to c) in the instant claims), (b) N-vinylactams ([0040], corresponds to a) in the instant claims), and optionally (e) crosslinking monomers such as triallylamine ([0058], corresponds to b) in the instant claims). Hossel1 teaches that the mixtures can be mixed with conventional polymers such as acrylic acid homopolymers ([0094]-[0096], corresponding to D) in the instant claims). Hossel1 teaches that additional monomers may be used in the composition including monomer (c) which includes compounds such as (meth)acrylic acid, crotonic acid and itaconic acid ([0042] corresponds to e) in the instant claims) and monomer (d) which includes C₁-C₄₀ alkyl esters of (meth)acrylic acids ([0043] corresponds to d) in the instant claims). Hossel1 teaches that the polymeric composition comprises 0.01-99.99% monomer (a), 0.01-99.99% of monomer (b), 0-50% each of monomers (c) & (d), and 0-10% monomer (e) ([0011]). Hossel1 teaches that the pH of the mixture can be

adjusted to a physiologically compatible pH ([0038]). Hossel1 teaches that the polymeric solids can but do not need to be isolated from the dispersion ([0063]-[0064]).

As to the claimed light transmittance, where the claimed and prior art products are substantially identical in structure or composition, or are produced by substantially identical processes, a *prima facie* case of obviousness has been established. Further, The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics. When as here, the prior art appears to contain the exact same ingredients and applicant's own disclosure supports the suitability of the prior art composition as the inventive composition component, the burden is properly shifted to applicant to show otherwise. Absent evidence to the contrary, the prior art composition must possess the claimed light transmittance, since it is substantially identical to the claimed composition (See MPEP § 2112.01).

**Ascertainment of the difference between the prior art and the claims
(MPEP 2141.02)**

The difference between the teachings of Hossel1 and the instant claims is that Hossel1 does not exemplify an embodiment of the invention possessing the polymer dispersant.

**Finding of *prima facie* obviousness
Rationale and Motivation (MPEP 2142-2143)**

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to formulate a polymer dispersion according to the

teachings of Hossel1 and produce the instant invention. The skilled artisan would have been motivated to add a polymer dispersant because Hossel1 teaches that the polymeric composition can be combined with conventional polymer dispersants such as homo- and copolymers of acrylic acid (*supra*).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in formulating a polymer dispersion according to the teachings of Hossel1 and producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hossel1 as applied to claim 1 above, and further in view of Kim et al. (WO2001/062809 using US PreGrant Publication 2003/0147929 as translation).

Applicant claims

Applicant claims an aqueous polymeric dispersion obtainable from the free-radical polymerization of mixture of a) at least one α,β -ethylenically unsaturated amide-containing monomer, b) a crosslinking monomer containing two α,β -ethylenically unsaturated double bonds, and c) a monomer containing an α,β -ethylenically unsaturated double bond and a cationic or cationogenic group, in an aqueous medium in the presence of an aqueous polymeric anionic dispersant D).

**Determination of the scope and content of the prior art
(MPEP 2141.01)**

The teachings of Hossel1 are laid out above.

**Ascertainment of the difference between the prior art and the claims
(MPEP 2141.02)**

The difference between the teachings of Hossel1 and the instant claims is that Hossel1 does not teach including a polymerization regulator. This deficiency in Hossel1 is cured by the teachings of Kim et al.

Kim et al. teach, as a whole, a cosmetic agent comprising a copolymer (abstract).

Kim et al. teach a copolymer obtained by the free-radical polymerization of a mixture of monomers ([0179]), where in the monomers used include (b) N-vinylactams ([0054], corresponds to a) in the instant claims), (c) N-vinylimidazoles ([0072], corresponds to c) in the instant claims), and optionally (f) crosslinking monomers such as triallylamine ([0103], corresponds to b) in the instant claims). Kim et al. teach that additional monomers may be used in the composition including monomer(d) which includes C₁-C₄₀ alkyl esters of (meth)acrylic acids ([0082] corresponds to d) in the instant claims) and monomer (e) which includes compounds such as (meth)acrylic acid, crotonic acid and itaconic acid ([0042] corresponds to e) in the instant claims). Kim et al. teaches that the polymeric composition comprises 25-90% of monomer (b), 0.5-30% each of monomers (c), 0-30% of monomer (d), and 0.001-4% of monomer (f) ([0036]-[0038] & [0102]). Kim et al. teach that a regulator can be added to the polymerization mixture to control the K-value (a polymer parameter related to chain length of the

polymer molecules and bulk viscosity of the polymer in solution) of the resulting polymer ([0188]-[0189]). Kim et al. teach that the polymeric solids can but do not need to be isolated from the dispersion ([0189]).

**Finding of *prima facie* obviousness
Rationale and Motivation (MPEP 2142-2143)**

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to add a regulator as taught by Kim et al. to the polymerizable mixture of Hossel1 and produce the instant invention. The skilled artisan would have been motivated to add a regulator because Kim et al. teach that the regulator can be used to control the K-value of the polymer (which in turns controls the viscosity of the polymer).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in adding a regulator as taught by Kim et al. to the polymerizable mixture of Hossel1 and producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

6. Claims 1, 2, 4-6, 8-12, 15, & 25 are rejected under 35 U.S.C. 103(a) as being obvious over Dieing et al. (US Patent 6,682,725).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it

constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Applicant claims

Applicant claims an aqueous polymeric dispersion obtainable from the free-radical polymerization of mixture of a) at least one α,β -ethylenically unsaturated amide-containing monomer, b) a crosslinking monomer containing two α,β -ethylenically unsaturated double bonds, and c) a monomer containing an α,β -ethylenically unsaturated double bond and a cationic or cationogenic group, in an aqueous medium in the presence of an aqueous polymeric anionic dispersant D).

Determination of the scope and content of the prior art (MPEP 2141.01)

Dieing et al. teach, as a whole, a cosmetic hair composition comprising a polymeric composition (abstract).

Dieing et al. teach a copolymer obtained by the free-radical polymerization of a mixture of monomers (column 2, lines 40-43), where in the monomers used include (a) N-vinylimidazoles (column 2, line 65 through column 3, line 64, corresponds to c) in the instant claims), (b) N-vinyl lactams (column 4, lines 14-23, corresponds to a) in the instant claims), and (d) crosslinking monomers such as triallylamine (column 4, line 44, through column 6, line 8, corresponds to b) in the instant claims). Dieing et al. teach that the mixtures can be mixed with conventional polymers such as acrylic acid homopolymers (column 6, line 62 through column 7, line 14, corresponding to D) in the instant claims). Dieing et al. teach that additional monomers may be used in the composition including monomer (c) which includes C₁-C₂₄ alkyl esters of (meth)acrylic acids (column 4, lines 38-43, corresponds to d) in the instant claims). Dieing et al. teaches that the polymeric composition comprises 1-99.99% monomer (a), 0-98.99% of monomer (b), 0-50% of monomer (c), and 0.01-10% monomer (d) (column 2, lines 44-60).

As to the claimed light transmittance, where the claimed and prior art products are substantially identical in structure or composition, or are produced by substantially identical processes, a *prima facie* case of obviousness has been established. Further, The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics. When as here, the prior art appears to contain

the exact same ingredients and applicant's own disclosure supports the suitability of the prior art composition as the inventive composition component, the burden is properly shifted to applicant to show otherwise. Absent evidence to the contrary, the prior art composition must possess the claimed light transmittance, since it is substantially identical to the claimed composition (See MPEP § 2112.01).

**Ascertainment of the difference between the prior art and the claims
(MPEP 2141.02)**

The difference between the teachings of Dieing et al. and the instant claims is that Dieing et al. do not exemplify an embodiment of the invention possessing the polymer dispersant.

**Finding of *prima facie* obviousness
Rationale and Motivation (MPEP 2142-2143)**

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to formulate a polymer dispersion according to the teachings of Dieing et al. and produce the instant invention. The skilled artisan would have been motivated to add a polymer dispersant because Dieing et al. teaches that the polymeric composition can be combined with conventional polymer dispersants such as homo- and copolymers of acrylic acid (*supra*).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in formulating a polymer dispersion according to the teachings of Dieing et al. and producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to

one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

7. Claims 1, 2, 4-6, 8-12, 15, & 25 are rejected under 35 U.S.C. 103(a) as being obvious over Hössel et al. (US Patent 7,422,735, hereafter Hossel2).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Applicant claims

Applicant claims an aqueous polymeric dispersion obtainable from the free-radical polymerization of mixture of a) at least one α,β -ethylenically unsaturated amide-

containing monomer, b) a crosslinking monomer containing two α,β -ethylenically unsaturated double bonds, and c) a monomer containing an α,β -ethylenically unsaturated double bond and a cationic or cationogenic group, in an aqueous medium in the presence of an aqueous polymeric anionic dispersant D).

**Determination of the scope and content of the prior art
(MPEP 2141.01)**

Hossel2 teaches, as a whole, a cosmetic dermatological formulation comprising a polymeric composition (abstract).

Hossel2 teaches a copolymer obtained by the free-radical polymerization of a mixture of monomers (column 2, lines 37-39), where in the monomers used include (a) N-vinylimidazoles (column 2, line 66 through column 4, line 41, corresponds to c) in the instant claims), (b) N-vinyl lactams (column 4, lines 42-57, corresponds to a) in the instant claims), and (e) crosslinking monomers such as triallylamine (column 5, line 23 through column 6, line 51, corresponds to b) in the instant claims). Hossel2 teaches that the mixtures can be mixed with conventional polymers such as acrylic acid homopolymers (column 9, lines 20-43, corresponding to D) in the instant claims). Hossel2 teaches that additional monomers may be used in the composition including monomer (c) which includes compounds such as (meth)acrylic acid, crotonic acid and itaconic acid (column 4, lines 58-65, corresponds to e) in the instant claims) and monomer (d) which includes C₁-C₄₀ alkyl esters of (meth)acrylic acids (column 4, line 66 through column 5, line 22, corresponds to d) in the instant claims). Hossel2 teaches that the polymeric composition comprises 1-99.99% monomer (a), 0-98.99% of

monomer (b), 0-50% each of monomers (c) & (d), and 0.01-10% monomer (e) (column 2, lines 40-60).

As to the claimed light transmittance, where the claimed and prior art products are substantially identical in structure or composition, or are produced by substantially identical processes, a *prima facie* case of obviousness has been established. Further, The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics. When as here, the prior art appears to contain the exact same ingredients and applicant's own disclosure supports the suitability of the prior art composition as the inventive composition component, the burden is properly shifted to applicant to show otherwise. Absent evidence to the contrary, the prior art composition must possess the claimed light transmittance, since it is substantially identical to the claimed composition (See MPEP § 2112.01).

**Ascertainment of the difference between the prior art and the claims
(MPEP 2141.02)**

The difference between the teachings of Hossel2 and the instant claims is that Hossel2 does not exemplify an embodiment of the invention possessing the polymer dispersant.

**Finding of *prima facie* obviousness
Rationale and Motivation (MPEP 2142-2143)**

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to formulate a polymer dispersion according to the

teachings of Hossel2 and produce the instant invention. The skilled artisan would have been motivated to add a polymer dispersant because Hossel2 teaches that the polymeric composition can be combined with conventional polymer dispersants such as homo- and copolymers of acrylic acid (*supra*).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in formulating a polymer dispersion according to the teachings of Hossel2 and producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

In light of the forgoing discussion, one of ordinary skill in the art would have concluded that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Response to Arguments

8. Applicant's arguments filed March 21, 2011, have been fully considered but they are not persuasive.

Applicant argues that the prior art rejections do not teach the limitations that the polymeric dispersion is obtained by free-radical polymerization of a monomer mixture M) "wherein the monomer mixture M) is polymerized in an aqueous medium in the presence of at least one polymeric anionic dispersant D)". Respectfully, the examiner continues to find applicant's argument defective. First, selection of any order of adding

ingredients is prima facie obvious, in the absence of unexpected results (See MPEP § 2144.04 IV.C). Ultimately, however, the claim is a product-by-process claim, and, as such, the patentability depends on the structure of the product, not the process steps. Clearly the prior art teach polymeric dispersions comprising the claimed polymer (made from the claimed monomer mixture) and the polymeric dispersant; therefore, the burden is on applicant to show that the claimed process results in an unobvious difference between the prior art and claimed inventions (See MPEP § 2113).

Applicant further attempts to establish that the structure of the polymer is different when polymerization occurs with the dispersant being present during the polymerization by pointing to example 1 and comparative example 1 on page 43 of the specification. Respectfully, this data does not support the applicant's conclusion. Example 1 is a polymeric dispersion made by polymerizing vinyl pyrrolidone, N-vinyl-2-methylimidazolium methylsulfate, and triallylamine, wherein the polymerization is carried out in the presence of an acrylic acid-maleic acid copolymer. Comparative example 1 is polymeric dispersion (presumably) made by polymerizing vinyl pyrrolidone, N-vinyl-2-methylimidazolium methylsulfate, and triallylamine. Comparative example 1 is not a polymeric dispersion made by polymerizing vinyl pyrrolidone, N-vinyl-2-methylimidazolium methylsulfate, and triallylamine, wherein the polymer is dispersed in an aqueous medium in the presence of an acrylic acid-maleic acid copolymer. The appropriate comparison would have been between example 1 and comparative example 1 to which a solution of acrylic acid-maleic acid copolymer had been added. The data, therefore, establishes that the dispersant is necessary in the dispersion, not,

as applicant asserts, that it is necessary to be present during the polymerization. Further, even if applicant's example showed what applicant asserts, the single narrow example in the specification does not establish that this result holds for the broad scope of the independent claim.

Applicant argues that Hossel¹ (and Dieing) do not meet the claimed limitations concerning light transmittance. Note that this argument only applies to claims 15 & 25. "Products of identical chemical composition cannot have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The examiner asserts that, absent evidence to the contrary, the prior art references teach the same chemical structures, therefore the light transmittance is necessarily present. Applicant points to the disclosure in Dieing that example 1 is colorless. This is not convincing as the example does not fall in the scope of the claims (it lacks the dispersant) and colorlessness is not equivalent to having high light transmittance (especially as applicant has defined LT in the specification to be measured only at 600 nm). Light transmittance may be reduced by two separate factors, absorbance and scattering. Color is a manifestation of absorbance, but scattering depends on the physical state of composition (emulsion or dispersion versus solution). An emulsion could easily have very low light transmittance and still be colorless.

The expected result remains the same; a polymeric dispersion is made in the absence of evidence to the contrary. No unexpected results have been presented.

Applicant's arguments are not persuasive, and the rejection under 35 U.S.C. §103(a) is maintained.

Conclusion

Claims 1-16 & 25 are rejected. Claims 17-24 are withdrawn. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lea whose telephone number is (571)270-5870. The examiner can normally be reached on Mon-Fri 7:30-3:30 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Kwon can be reached on (571)272-0581. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. R. L./

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Examiner, Art Unit 1613

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